

CLAIMS

1. A method for manufacturing a bonded magnet characterized in that the method comprises:

a weighing and filling process of weighing and filling a compound composed of an anisotropic magnet powder and a thermosetting resin in a cavity of which the wall temperature is lower than the softening point of the thermosetting resin;

an orienting process of applying an orientation magnetic field to said compound weighted and filled in said cavity or a powder compact of said compound while heating at the temperature of not lower than said softening point to make said thermosetting resin into one of a softened state and a molten state, thereby orienting said anisotropic magnet powder; and

a compactly bonding process of heating and compression-molding said oriented anisotropic magnet powder and said thermosetting resin, thereby obtaining a bonded magnet compact in which said oriented anisotropic magnet powder is bonded with said thermosetting resin.

2. The method for manufacturing a bonded magnet as claimed in claim 1, wherein in said weighing and filling process, the relative width ratio (W/d) of the minimum width (W) of said cavity to an average particle diameter (d) of said compound ranges from 1 to 15.

3. The method for manufacturing a bonded magnet as claimed in claim 2, wherein said weighing and filling process is the process of moving a powder box which has an open bottom and stores said compound therein along an

upper opening of said cavity in horizontal directions, and said minimum width (W) is the width along said moving directions of said powder box.

4. The method for manufacturing a bonded magnet as claimed in claim 2, wherein said cavity in said weighing and filling process has a bottomed cylindrical configuration, and a difference in radius between an outer periphery and an inner periphery of said cavity is said minimum width (W).

5. The method for manufacturing a bonded magnet as claimed in claim 3, wherein said cavity in said weighing and filling process has a bottomed cylindrical configuration, and a difference in radius between an outer periphery and an inner periphery of said cavity is said minimum width (W).

6. The method for manufacturing a bonded magnet as claimed in claim 1, wherein said weighing and filling process includes a powder molding process of compression-molding said compound filled in said cavity to obtain said powder compact to be subjected to said orienting process.

7. The method for manufacturing a bonded magnet as claimed in claim 1, wherein said orienting process further includes a pre-molding process of heating and compression-molding said oriented anisotropic magnet powder and said thermosetting resin, thereby obtaining a pre-molded body to be subjected to said compactly bonding process.

8. The method for manufacturing a bonded magnet as claimed in claim 1, wherein said weighing and filling process is carried out with a first molding die,

said orienting process is carried out with said second molding die which is different from said first molding die, and said compactly bonding process is carried out with a third molding die which is different from said first molding die and said second molding die.

9. The method for manufacturing a bonded magnet as claimed in claim 6, wherein said weighing and filling process is carried out with a first molding die, said orienting process is carried out with a second molding die which is different from said first molding die, and said compactly bonding process is carried out with a third molding die which is different from said first molding die and said second molding die.

10. The method for manufacturing a bonded magnet as claimed in claim 7, wherein said weighing and filling process is carried out with a first molding die, said orienting process is carried out with a second molding die which is different from said first molding die, and said compactly bonding process is carried out with a third molding die which is different from said first molding die and said second molding die.

11. The method for manufacturing a bonded magnet as claimed in claim 1, further comprising a lubricant applying process of applying a lubricant to at least a surface of said powder compact obtained after said weighing and filling process before said orienting process.

12. The method for manufacturing a bonded magnet as claimed in claim 11, wherein said lubricant is a mixture lubricant obtained by mixing a solid

lubricant in oil.

13. The method for manufacturing a bonded magnet as claimed in claim 12, wherein said oil is a chemical compound which does not degenerate and does not deteriorate the magnetic properties of the anisotropic magnet powder during heating in at least said orienting process.